**SUBMIT**

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53187478.68 20848487.142857 8748337530 26164260.145161 30623292.409836 101961967743

# Making recombinant dna worksheet answers key 2017

## RNA & Transcription Worksheet

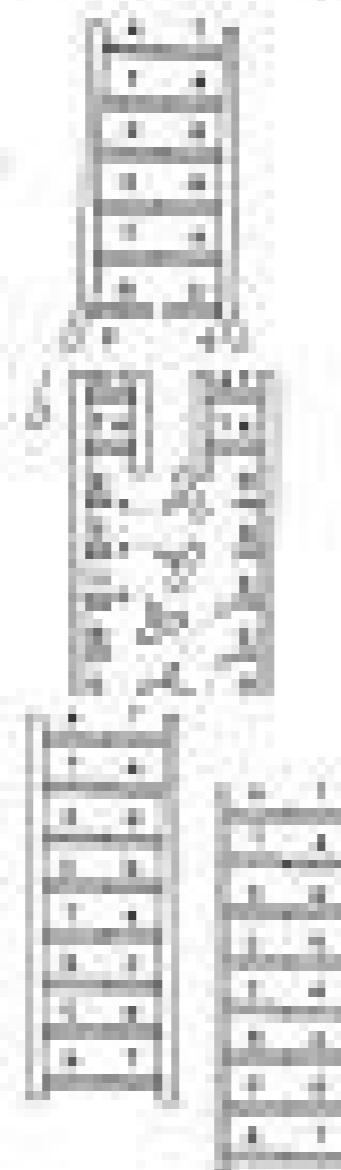
1. What is the mRNA strand that would be copied from this DNA strand?  
G G C T A T A T C C T G C G C T A T A C G C T A
2. The m in mRNA stands for \_\_\_\_\_.
3. What is the function of mRNA? \_\_\_\_\_
4. Draw a picture of the monomer of RNA, called a \_\_\_\_\_.
5. In your picture label the following parts – ribose sugar, base, and phosphate group.
6. What are three differences between RNA and DNA?
7. What are the three types of RNA?
8. If the following strand is a tRNA, what is the sequence of the DNA strand it copied itself from?  
U U A G C G C G G G A U U A A G C U C G A A U A
9. What is the function of tRNA?
10. Proteins are made up of \_\_\_\_\_, which our bodies either make or come from our food.
11. What does rRNA do?
12. Name the two places in the cell where you can find RNA.
13. Name the place in the cell where you can find DNA.
14. Draw an mRNA strand that would complement the DNA strand CCAAT.

15. In your picture above, circle an RNA nucleotide.
16. What are the four steps of transcription?

## DNA Replication Practice

**Directions:** Below are short steps in DNA replication. Follow the directions to make sure each section matches the previous section.

1. Indicate happening on the DNA template on the right:  
Replicate the DNA step by step sequence.



2. Indicate happening on the DNA template during the last 1/4 and final DNA replication:  
Present below are the 4 steps of DNA replication.

3. Indicate happening during the final step of DNA replication:  
The new DNA copy is finally being synthesized and found.

## How DNA is Copied

1. Indicate if true or false that two strands of DNA are complementary? That some specific bases pair with A and T bases.
2. Indicate whether or not each of the above statements is true or false:  
a. Living organisms plan the stages of DNA replication in advance.
3. Living organisms plan the stages of DNA replication in advance.  
b. The enzyme DNA polymerase uses existing template strands and adds complementary nucleotides to these strands utilizing energy.
4. The DNA template binds to each of the new strands building them up.

Biology

Name: \_\_\_\_\_

## DNA Structure and Replication Quiz Review Sheet

### Fill-in the Blanks:

Use the following word list to answer the following questions. Not every word is used, but you should be familiar with them all for your quiz.

Double Helix	Semiconservative	Chargaff
Cytosine	Guanine	Deoxyribose Sugar
Nitrogen Base	Watson	Helicase
S Phase of Interphase	DNA Replication	Hydrogen Bonds
Thymine	Covalent Bonds	Mitosis
Nucleotides	Phosphate Group	Antiparallel
Crick	Nucleic Acids	Replication Fork
DNA Polymerase	Adenine	

1. Chargaff's Rule says that thymine is equal in amount to \_\_\_\_\_ and cytosine is equal in amount to \_\_\_\_\_ in a double stranded DNA molecule.
2. DNA is made of subunits or building blocks called \_\_\_\_\_.
3. During \_\_\_\_\_, DNA makes an exact copy of itself. This occurs during \_\_\_\_\_ of the cell cycle.
4. The two scientists credited with determining the DNA structure are \_\_\_\_\_ and \_\_\_\_\_.
5. The shape of a DNA molecule is a \_\_\_\_\_ with the two strands of DNA running \_\_\_\_\_ or opposite each other.
6. The two subunits that make up the backbone of the DNA molecule are \_\_\_\_\_ and \_\_\_\_\_. They are joined together with \_\_\_\_\_ bonds.
7. The rungs of the DNA molecule are made of four different kinds of \_\_\_\_\_. They are held together by \_\_\_\_\_ bonds.
8. \_\_\_\_\_ is the enzyme that unwinds and unzips the DNA molecule during replication.
9. A \_\_\_\_\_ is made when the DNA strands are pulled apart.
10. \_\_\_\_\_ is the enzyme that builds the complementary strands of DNA during replication.
11. DNA replication is said to be a \_\_\_\_\_ process because each of the original strands serves as templates for building the new strands.
12. Replication is required for \_\_\_\_\_ to occur in the cell, because DNA copies are divided between cells.
13. DNA and RNA are examples of \_\_\_\_\_.

## Recombinant DNA Technology / worksheet

1. Two names for organisms that contain foreign DNA are \_\_\_\_\_ and \_\_\_\_\_
2. The "special scissors" used to cut DNA in certain species are called \_\_\_\_\_

3. Using options 1-4 at the bottom of the page, complete the table below:

Cutting Pattern of Enzyme	DNA Sequence This Enzyme will Cut (choose from 1-4 below)
-G A A T T C-	1
-C T T A G G-	2
-G G G A T C C-	3
-C C T A G G-	4
-A G G C T T-	
-T T C G A A-	
-G G T A C C-	
-G C A T G G-	

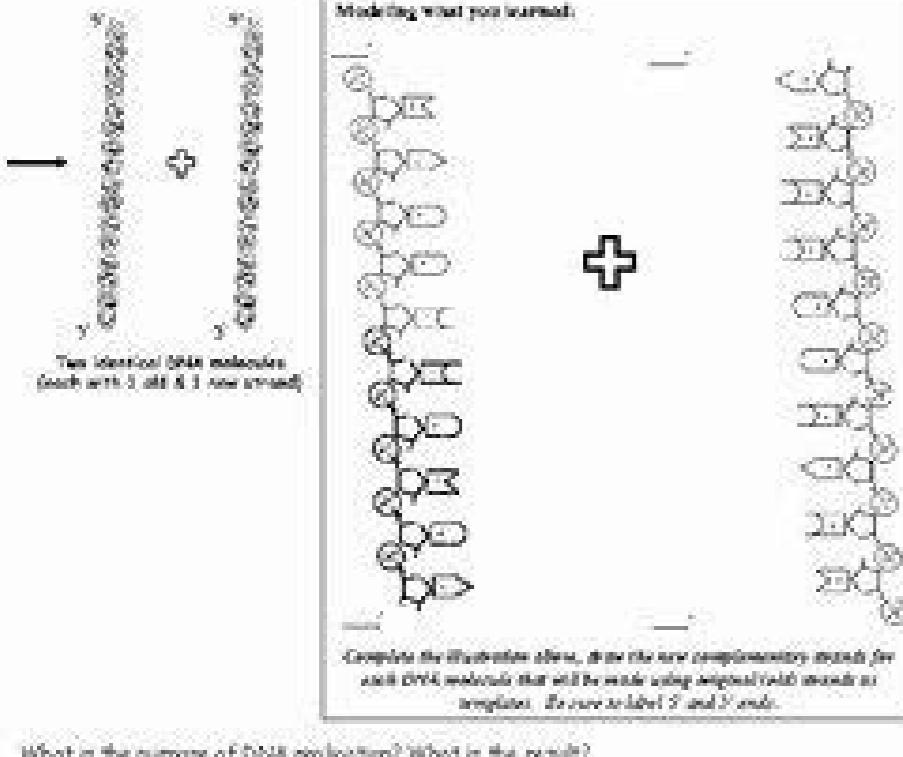
① -G A G G A T C C A T G-	② -G C A G A A T T G A T C-
③ -G A C T A G G T A C C A A-	④ -A A G C T T G A C T A-

4. On DNA segments 1-4 above, draw lines showing where each of the restriction enzymes cleaves them.

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Class period: \_\_\_\_\_

### DNA Replication

**Step 3:** The enzyme remains attached to the DNA strand until all the DNA (in that strand once) is copied. Once complete it detaches and results in two DNA molecules, each made up of 1 original (old) strand and 1 new strand.



What is the purpose of DNA replication? What is the result?

\_\_\_\_\_

\_\_\_\_\_

Making recombinant dna worksheet answers.

Gene therapy: a medical field that focuses on the use of the therapeutic supply of nucleic acids in a patient's cells as a medicine to treat the disease. What is the activity of the new? recombinant DNA technology5. Genetic engineering: is the process of using recombinant DNA technology (ARDN) to alter the genetic creator of an organism. DNA - or desoxyribonucleic acid, is hereditary material in humans and almost all other organisms; recombinant DNA: DNA molecules of two different species that are inserted into a hostorganism to produce new genetic combinations that are valuable to science, medicine, agriculture and industry. Plasmids are small extrachromosomal DNA molecules within a cell that physically separates from chromosomal DNA and can be replicated independently. Cloning: the production of an exact copy, specifically, an exact genetic copy, of a gene, cell, or organism. Genome: the complete set of genetic instructions of an organism. 7. Gene mapping: is the process of establishing the locations of genes in chromosomes. Biotechnology: biology-based technology; biotechnology takes advantage of cell and biomolecule processes to develop technologies and products that help improve our lives and the health of our planet.9. Polymerase chain reaction: a method widely used to quickly make millions to billions of copies of specific DNA sample, allowing scientists to take a very small sample of DNA and amplify it to a large amount to study in detail.10. You are reading a free preview that page 2 is not shown in this preview. Maize (insect resistance) 1. How can organisms be modified? Agencies can be modified using engineering technology manipulating his genetic material. List plants and animals that have desirable or improved traits and how each of the traits was introduced or developed. recombinant DNA technology4. Classic party, recombinant DNA2. 2 yecnarelot Edicibreh( Inepylgonhctet and Tnnanbmhnbmorit. 5 )ecnasser toesnit porc nottoc. 3 )noitisop you ytaf Derecta 1 Nosselsciteneq 1 You Apto - 1 Retrauq2 ygolob Larenega Mets atacaTO 21 Edarg Etaneub jmaafac6 Catahwghnhet and tnanbmocer xe euqnhctet gnifidom. 2ygonhctet and tnanbmocer .1ygonhctet and tnanbmocer)seotamot gminepirdeyed( rvas-rvaf .:empmaxeuqet .:empmaxeuqet .:empmaxeuqet

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